ANWAR ASSOCIATES
CONSULTING ACTUARIES

University of Science & Technology Bannu

Bannu

Employees' Pension Fund

Actuarial Valuation Report as at 30.06.2022

Date	Author	Version
Sunday, August 14, 2022	Baber Khan (Senior Actuarial Analyst) Ch. Mohammad Anwar (Responsible Actuary)	FINAL

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1. Executive Summary

i. We, Anwar Associates Consulting Actuaries ("Consultant"), have prepared the Actuarial Valuation Report of University of Science & Technology Bannu ("USTB"), Employees' Defined Benefit Pension Scheme in alignment with our Engagement Agreement. The valuation is performed as of June 30, 2022 (hereinafter referred to as "the Valuation date").

ii. The Projected Unit Credit method was used to value the liabilities in accordance with IAS 19.

iii. The total number of employees/pensioners used in the valuation as of the valuation date were as follows.

Table 1: Summary of Data Used

Particulars	as of Valuation Date
Total Number of Active Employees	445
Total Monthly Pensionable Salary (PKR)	15,459,690
Total Number of Pensioners	3
Total Monthly Pension & Medical Allowance (PKR)	38,842

iv. All assumptions used in this Report are best-estimate assumptions and were discussed in section 6 below. The key assumptions are:

Table 2: Summary of Assumptions

Key Assumptions	Rate
Discount Rate	14.00%
Salary Increase Rate	13.00%
Pension Increase Rate	12.00%
Withdrawal rate	Low
Mortality rates.	SLIC with 1-year setback

v. The actuarial results computed, which are presented in Section 8 of this report, are as follows:

Table 3: Summary of Actuarial Results

Actuarial Results	June 30, 2022
Present Value of Obligation	2,401,223,029
Fair Value of Plan Assets	722,745,331
Funding Deficit (Liability)	1,678,477,698
Cost to P&L Account for the financial year	471,791,846
Contribution Rate as a percentage of Pensionable Salary	96.86%

vi. The results illustrated in this Report and all commentary on the valuation results are based on the data/information provided to us by the Client. The results presented are sensitive to the assumptions set and should be treated with care. Any change in the provided data after our valuation would change the results, the impact of which may need to be reassessed.

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2. Introduction

2.1 Declaration

We, Anwar Associates Consulting Actuaries ("Consultant"), have conducted the Actuarial Valuation Report of University of Science & Technology Bannu ("the Client") Employees' Defined Benefit Pension Scheme in alignment with our Engagement Agreement.

We have performed the actuarial work in accordance with regulatory and IFRS requirements and issued the following Report which includes details of all the work performed. We have also complied with the following guidance and professional standards published by the UK Institute and Faculty of Actuaries (to the extent that they are relevant to the valuations of Employee Benefits):

- The Actuaries Code, published by the Institute and Faculty of Actuaries, UK
- ISAP 1 and ISAP 3, published by the International Actuarial Association
- Actuarial Profession Standard X1 and X2 ("APS X1" and "APS X2") published by the Institute and Faculty of Actuaries UK.

This Report also complies with the Professional Actuarial Standards, prescribed by The Pakistan Society of Actuaries (PSoA), as in the Guidance Notes mentioned below:

1. Guidance Note 6 (GN6): General Actuarial Practice
2. PSoA Guidance Note 3 (GN3) and Guidance Note (GN4): Assumptions

2.2 Report Layout

The Report consists of the following sections:

- An Executive Summary which precedes this section
- This introductory section
- Valuation Data and employee statistics
- Valuation Methodology & Assumptions
- Results of Actuarial Valuation
- Conclusion and Recommendations

2.3 Scope

The Scope of our engagement is set out in our Engagement Agreement.

The Client maintains a Defined Benefit Pension Scheme in compliance with the Federal Pension Rules which falls within the definition of IAS-19 and thus requires Actuarial Valuation.

Concerning the Scope of Work it deals with the following specific tasks:

a) Determination of Pension Liability as of June 30, 2022,
b) Liability break-up for Active employees and Pensioners
c) Contribution rate to fund the existing Defined Benefit pension scheme,
d) Pension cash outflows including commutation for the next 30 years,
e) Sensitivity Analysis of PV of liabilities vis-a-vis key variables
f) Determination of the extent to which the existing scheme is sustainable,

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2.4 Purpose

The purpose of this report is to fulfill regulatory requirements and provide the Management of the Client with:

- A description of the Defined Benefit Pension Scheme.
- The actuarial valuation methodology and assumptions.
- Actuarial values and disclosure information in respect of employees' liabilities
- To determine Contribution Rate as a percentage of Pensionable Salary.

2.5 Responsibilities

It is the Client's responsibility to read this Report and understand the work we have performed to derive the results. If the Client believes that we have misinterpreted data, or where it believes there are additional reasons to take a different view on any set of results, then the Client USTB consult with us on those matters. We work to understand data as well as possible, but specifics may still escape our normal process, and then it is the Client's responsibility to point out external and/or unique factors.

2.6 Data Reliance

In preparing this Report, we have relied upon the information and data provided to us by the Client. Where possible, we perform basic consistency and reasonability checks, but we are reliant on the providers of this information for its accuracy and completeness, as we have not independently verified or audited the information provided.

The Actuarial Results are wholly reliant on the accuracy and validity of the information supplied to us. If the data submitted later proves to be incomplete or inaccurate, then the Valuation Results may differ significantly from the results that would be computed from reasonable information. A revision of this Report may then be required.

Any further information provided by us, on request from the Client, which is considered out of Scope of Work and Supplemental to this Report, should be treated as indicative only and not relied upon for its accuracy.

We have relied on all the information and data provided as being complete and accurate unless stated otherwise in this Report. Assumptions or estimates may have been made if certain data items were not available.

2.7 Limitations

In our opinion, we have employed techniques and assumptions that are appropriate, and we consider the estimates and the consequential conclusions presented herein to be reasonable, given the information that we have reviewed.

Projections of the future for valuation purposes are based on many assumptions and even though these projections are carried out on a central estimate basis, it is unlikely that future experience will exactly match what was projected.

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We have not provided any form of audit services or advice on any management aspects relating to the Scheme or its obligations.

The intended recipients of this Report are the Client and its auditors. This Report is not intended for any other party's use, either in part or as a whole, since other parties may not have the background, information, or understanding to be able to interpret and use this Report properly.

We accept no responsibility or liability to any other parties who choose to make use of the information in this Report.

This Report should be considered in its entirety, including all appendices. The use of individual components out of context could be misleading.

The Report is based on our understanding of applicable laws and regulations as of the Valuation Date. We are not a qualified accounting, audit, or law firm and are not responsible for the interpretation of, or compliance with, accounting standards and local law. Citations to, and descriptions of, accounting standards and principles provided in this Report are for reference purposes only. This Report does not constitute legal advice and is not suitable for making decisions concerning benefit changes.

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3. Valuation Data and Statistics

3.1 Data Submitted

The data provided by the Client and used in our Valuation are:

- Data regarding active employees as of 30.06.2022. We were provided data fields such as employee code, employee name, joining date, date of birth, scale, and current total monthly salary against each employee.
- Data regarding pensioners as of 30.06.2022. We were provided data fields such as pensioner name, retirement date, date of birth, gender, monthly pension, monthly medical allowance, type of pensioner, percentage of commutation.
- Budgeted Salary increases over future years.

The data was checked for material integrity, including checking for:

- Missing values (e.g. dates of birth, dates of joining, etc.)
- Extreme values (e.g. employees under age 18 years or age above retirement age)

3.2 Membership statistics

In this section, we present key statistics describing the membership as of June 30, 2022.

Table 4: Detail of Key Statistics

Particulars of Active Employees	as of Valuation Date
Total Number of Active Employees	445
Total Monthly Pensionable Salary (PKR)	15,459,690
Average Monthly Pensionable Salary (PKR)	34,741
Average Age in years	41.1
Average Age of Joining in years	28.8
Average Past Years of Service in years	12.3

Particulars of Pensioners/Beneficiaries	as of Valuation Date
Number of Self Pensioners	1
Number of Widow Pensioners	2
Number of Children/Other Pensioners	0
Total Number of Pensioners	3
Total Monthly Pension (PKR)	30,886
Total Monthly Medical Allowance (PKR)	7,956
Average Monthly Pension (PKR)	10,295
Average Monthly Medical Allowance (PKR)	2,652
Average Age in Years	58

3.3 Fair Value of Plan Assets

All amounts shown in the below table are in PKR and expressed in millions.

Table 5: Plan Assets

Type of Assets	as of Valuation Date
Pension Fund Account Balance	722.745

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4. Valuation Methodology and Assumptions

IAS 19: Para 144 Principal Actuarial Assumptions used to determine the Present Value of the Defined Benefit Obligation

4.1 Projected Unit Credit Method

International Accounting Standard (IAS 19), prescribe the Projected Unit Credit (PUC) method to value such employee benefits, by reference to their projected amount at the date of payment.

This involves projecting each unit of the benefit earned over a period plus earlier periods, to leaving service, retirement, death, or other future exit states, allowing for probabilities of reaching those states, also allowing for salary escalation over time, and then discounting those benefits to the Valuation Date.

The resultant estimated liability amount reflects full expected service cost, to each of leaving service, retirement or death, or other exit states.

The Current Service Cost is determined by dividing, for each employee, their total liability by total expected service and then aggregating the Current Service Cost for all members. The

Current Service Cost can be viewed as the cost accruing over the next year, allowing for escalation and discounting to the different possible dates of payment.

To determine the Defined Benefit Obligation ("DBO"), we subtract from the total estimated liability the Current Service Cost multiplied by expected future service. This is, in effect, the liability that should be held at the Date of the Valuation, for service and benefits accrued up to the date of the Valuation.

Differences between expectations and facts emerge as actuarial gains or losses and are amortized immediately the next year.

4.2 Valuation Assumptions

The results presented in this Report involve actuarial calculations that require assumptions about future events. We are concerned with long-term averages of various assumptions rather than those that are presently applicable. Paragraphs 72 to 91 of IAS 19 cover the selection of actuarial assumptions to be used in the valuation of the defined benefit obligation.

As per IAS 19, the actuarial assumptions USTB be unbiased, i.e. they should reflect the best estimates of the expected experience. In addition, the assumptions should be mutually compatible, i.e. reflect the economic relationships between factors such as inflation rate, salary escalation rate, and discount rate.

To calculate the Actuarial liabilities, certain financial and demographic assumptions are used, as per the Guidance Notes issued by the Pakistan Society of Actuaries (PSoA), from time to time. The Financial assumptions relate to the discount rate and the future rate of salary increases, whereas the Demographic assumptions relate to expected Mortality rates and Employee turnover rates

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These assumptions may differ from one Actuarial Valuation to the next because of changes in mandated requirements, economic conditions, and Plan experience. However, a change in assumptions is not an indication that prior assumptions, whenever made, were unreasonable.

4.2.1 Discount Rate

Under IFRS (IAS 19 – para 83) the discount rate (otherwise known as the nominal interest rate) should reflect the rate at which liabilities could effectively be settled. IAS 19 further clarifies that the discount rate should be determined by reference to market yields at the end of the reporting period on high-quality corporate bonds or, where there is no deep market in such bonds, by reference to market yields on government bonds. Currencies and terms of bond yields used USTB be consistent with the currency and estimated term of the post-employment benefit obligations being discounted. As such it is necessary to determine the the effective duration of both the pension liability as well as of the bonds which are selected to determine the discount rate.

Effective Duration approximates the slope of a bond's value as a function of interest rate movements taking the difference in the bond's value (V) for changes in the interest rate (i) by an equal amount ($x = \delta i$) in both directions and dividing by twice the original value times the interest rate change in each direction.

$$\text{Effective Duration} = \frac{V_{i-x} - V_{i+x}}{2(V_i x)}$$

Pension liability duration is measured using the formula for Effective Duration, substituting the liabilities (L) for the bond's value (V).

$$\text{Duration} = \frac{L_{i-x} - L_{i+x}}{2(L_i x)}$$

The Discount Rate used to calculate the Actuarial Liabilities of the Projected Benefits is as recommended in the Circular issued by PSoA Discount Rate Committee on **July 4, 2022**, which varies according to the weighted average duration of the Plan.

Based on the weighted average duration of the Plan based on above formula which turns out to be **29 Years**, we have used a Discount Rate of **14.00%** per annum.

4.2.2 Expected Salary Increase

In accordance with IAS 19, the salary increment assumption is the long-term salary escalation that is expected to be awarded to the employees over the complete run-off period of the liability.

The experience shows, that usually the future rate of Salary increases and Discount rates are inter-related, since during periods of inflation or otherwise, both tend to rise somewhat in conformity with each other, but generally salaries at a lesser pace.

Thus, taking into consideration the Discount rate being used, it has been assumed that the Salaries would increase at an average rate of **13.00%** per annum compound, on a long term basis.

For general information, it may be submitted, that as regards the Actuarial liabilities, it is the difference between these two rates that matter, and not their values in isolation.

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4.2.3 Expected Pension Increase

From time to time the Federal Government increases pensions in payment, largely to account for inflation. Potential future increases have, therefore, to be factored into the valuation. This has been done based on historical trends.

The historic trend of the pension increases is as under;

Table 6: Historic Trend of Pension Increases

Year	Pension Increase Rate
2016	10.00%
2017	10.00%
2018	10.00%
2019	10.00%
2020	00.00%
2021	10.00%

It is assumed that monthly pension will increase at an average rate of **12.00%** per annum compound, on a long-term basis. This is a spread of 2.00% between the discount rate and the pension increase rate.

4.2.4 Expected Medical Allowance Increase

It is assumed that Medical Allowance will not increase in the future.

4.2.5 Expenses of Management of Pension Fund

It is assumed that expenses related to the management of the Pension Fund will be borne by USTB.

4.2.6 Mortality Rates

The Mortality Table SLIC (2001-05) with 1-year setback, based on the experience of the lives insured with State Life Insurance Corporation of Pakistan, has been used in determining the liability in respect of the Benefits payable under the Plan.

Specimen Mortality rates are given in Annexure B attached.

4.2.7 Withdrawal Rates

Based on our provisional analysis of the experience of different Domestic Organizations, in this respect, we have used the Age wise Withdrawal rates as given in Annexure B attached.

4.2.8 Cash-flow Projection Assumptions

Cash-flow projections of future pension payouts are based on several assumptions, which include the following assumptions in addition to the above demographic and financial assumptions.

4.2.9 Nature of the Fund

A closed pension set is assumed, that is, no new entrants will enter the group.

4.2.10 Plan Benefit Rules

It is assumed that the current benefit rules will not change for the period for which the cash-flow projections have been made.

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4.2.11 Summary of Assumptions

Table 7: Summary of Assumptions

Particulars	as of Valuation Date
Discount Rate	14.00%
Long Term Salary Increase Rate	13.00%
Long Term Pension Indexation Rate	12.00%
Long Term Medical Indexation Rate	0.00%
Normal Retirement Age	60 years
Weighted Average Duration	29 years
Next Salary Increase Date	01-Jul-22
Mortality Rate	SLIC with 1-year setback
Withdrawal Rate	Low

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5. Actuarial Valuation Results

5.1 Defined benefit obligation (DBO) - baseline valuation

Below are highlights of the results as of valuation date. All amounts shown in the table below are in PKR and expressed in millions.

Table 8: Actuarial Results

Particulars	Active Employees	Pensioners	Total
Present value of Defined Benefit Obligation	2,384.027	17.196	2,401.223
Fair Value of Plan Assets	-	-	722.745
Funding Deficit (Liability) as at valuation date	2,384.027	17.196	1,678.478
Service Cost	176.905	-	176.905
Interest Cost	292.775	2.112	294.887
Pension Expense (Provision) for the current financial year	469.680	2.112	471.792
Expected Service Cost	201.671	-	201.671
Expected Interest Cost	333.764	2.407	336.171
Expected Pension Expense (Provision) for next financial year	535.435	2.407	537.843

Total Accrued Actuarial Liability in respect of past service of USTB employees as of June 30, 2022 amounts to **PKR 2,401.223 million.** Total Value of the Employees' Pension Fund, as intimated by the USTB, is **PKR 722.745 million.**

Thus, there is a Deficit in the Pension Fund of **PKR 1,678.478 million** as of June 30, 2022.

5.2 DBO - Sensitivity analysis related to the long-term employee benefits

The obligations at the valuation date were re-estimated to show the impact of:

i. a 1.0% increase and decrease in the assumed discount rate;
ii. a 1.0% increase and decrease in the assumed salary increase rate;
iii. a 1.0% increase and decrease in the assumed pension increase rate; and
iv. a one-year increase in the assumed age for mortality rate

The table below summarizes the results of the sensitivity analysis.

The DBO is mostly sensitive to the projected increase in salary, pension, and changes in the discount rates.

Table 9: Sensitivity Analysis

Particulars	Change in Assumptions	DBO	Impact on overall liability
Baseline Scenario		2,401,223,029	
Discount Rate	Increase by 1.0%	1,819,415,505	-24.23%
Discount Rate	Decrease by 1.0%	3,220,579,416	34.12%
Salary Increase Rate	Increase by 1.0%	2,758,553,973	14.88%
Salary Increase Rate	Decrease by 1.0%	2,094,522,808	-12.77%
Pension Indexation Rate	Increase by 1.0%	2,789,930,563	16.19%
Pension Indexation Rate	Decrease by 1.0%	2,089,456,173	-12.98%
Mortality Rate	Increase by 1 year	2,476,833,540	3.15%
Mortality Rate	Decrease by 1 year	2,328,053,228	-3.05%

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5.3 Contribution Rate for Potentially Funding of future accrual

Contribution rate percentage is the ratio of the annual service cost and the expected annual pensionable salary for the next year.

The contribution rate to fund the future accrual for the current pension scheme of current active members is **96.86%** p.a.

5.4 Contribution Rate for Potentially Funding of current Deficit

Contribution rate percentage is the ratio of the pension liability and the present value of the pensionable salary.

The contribution rate to fund the current deficit for the current pension scheme over the remaining life of current active employees and pensioners is **58.12%** p.a.

5.5 Contribution Rate for Potentially Funding of future accrual and current deficit

The contribution rate percentage is the sum of the above two contributions.

The contribution rate to fund the future accrual and current deficit for the current pension scheme of current active employees and pensioners is **154.97% p.a.**

5.6 Intrinsic Cost

To determine the intrinsic cost of the pension scheme, we have considered sample employees joining at different ages.
We have projected the pension benefits payable to this sample employee from the superannuation age. We have then calculated the rate required to fund these benefit payments. The contribution comes to between 52% to 61% of the annual pensionable salary.

The contribution rate signifies that for a new hire above grade 15, for each PKR 1.00 salary, the reserve for retirement benefits is around PKR 0.5174.

Table 10: Intrinsic Cost

Entry Age	Grade 16 and above	Grade 15 and below
20	51.74%	52.26%
25	56.62%	57.20%
30	60.30%	60.92%
35	59.16%	59.78%
40	61.14%	61.14%

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5.7 Cash-Flow Projections

The expected commutations, pension, and medical allowance payments over the next 30 years and above for current employees/pensioners are as follow:

All amounts shown in the table below are in PKR and expressed in millions.

Table 11: Expected Benefit Payments

Starting from July 1, 2022	Commutation	Monthly Medical Allowance	Monthly Pension	Total
Year 1	0.998	0.134	0.659	1.790
Year 2	4.231	0.300	2.014	6.545
Year 3	1.579	0.363	2.792	4.733
Year 4	9.073	0.720	5.928	15.720
Year 5	7.728	1.041	9.147	17.916
Year 6	6.745	1.304	12.583	20.633
Year 7	8.869	1.678	17.207	27.755
Year 8	9.713	2.104	22.834	34.651
Year 9	15.059	2.744	30.887	48.690
Year 10	43.491	4.379	48.139	96.009
Year 11	51.056	6.337	69.905	127.298
Year 12	59.333	8.538	97.317	165.187
Year 13	98.677	12.202	141.241	252.120
Year 14	73.582	15.005	184.771	273.358
Year 15	91.438	18.457	238.396	348.291
Year 16	128.562	23.442	314.210	466.213
Year 17	241.698	32.725	434.874	709.297
Year 18	275.117	43.653	582.453	901.223
Year 19	410.466	59.488	792.176	1,262.131
Year 20	254.878	69.189	986.529	1,310.596
Year 21	318.905	81.671	1,229.861	1,630.438
Year 22	359.405	95.457	1,529.115	1,983.977
Year 23	274.167	106.397	1,846.634	2,227.198
Year 24	306.792	118.554	2,220.474	2,645.819
Year 25	404.209	134.366	2,689.695	3,228.269
Year 26	419.779	151.126	3,217.426	3,788.331
Year 27	369.265	165.730	3,808.001	4,342.996
Year 28	198.343	173.695	4,446.463	4,818.501
Year 29	266.727	184.294	5,237.711	5,688.732
Year 30	127.989	189.053	6,107.698	6,424.739
Year 31 and above	259.218	4,547.500	1,708,204.660	1,713,011.377

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6. Conclusion and Recommendations

The Pension Fund of USTB is in **Deficit** as of June 30, 2022.

To adequately fund the costs pertaining to the Pension Benefits, the following Monthly Contributions and lump-sum payments are recommended:

a) There is a Deficit in the Pension Fund of **PKR 1,678.477 million** as of June 30, 2022. It is recommended that USTB may make annual contributions of **PKR 677.126 million** over the period of next three years or annual contributions of **PKR 457.908 million** to the Fund, over the period of next five years. These figures are based on the assumption that the average return on the Fund will not be less than **14.00%** and the annual contributions will be made in the middle of the year.

b) To fund only the future accrual of Pension Fund benefits, USTB may contribute to the Pension Fund at the rate of **96.86%** of the Pensionable salaries of the covered employees.

c) However, in lieu of the above-mentioned contributions, USTB can make contribution to the Pension Fund at the rate of **154.97%** of the Pensionable salaries of the covered employees, to fund the future accrual and existing deficit of Pension Benefits in the Fund.

d) The actuarial liabilities and future funding costs are determined using various financial and demographic assumptions which may change over time. Since the actuarial liabilities of Defined Benefit Pension Funds are highly sensitive to these assumptions, therefore, regular Actuarial Valuations (at least after every two years) of such Funds are recommended to be conducted to devise future funding strategies.

Please be noted that there are risks associated with Valuation of Defined Benefit Plans and these are listed in Annexure C.

It will be a pleasure for us to answer any questions on any aspect of this Report, or to provide explanations or further details as may be appropriate.

Thanks for all the cooperation provided in the preparation of this Report.

Ch. Mohammad Anwar, FIA, FLMI. FPSA
Chief Executive Officer and Chief Actuary

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Annexure A – Plan Provisions

We have used and relied on the Pension Benefit plan provisions, supplied by USTB and are summarized below:

USTB is solely responsible for the validity, accuracy, and comprehensiveness of this information. If any plan provisions supplied are not accurate and complete, the valuation results may differ significantly from the results that would be obtained with accurate and complete information.

Following is a summary of the benefits payable from the Pension Fund.

- The Normal Retirement Age is 60 years.
- Early retirement is possible after 25 years of service.
- No benefit will be paid if service is less than 5 years.

i. Superannuation Pension

If service is greater than 5 and less than 10 years:

A lump sum gratuity is payable. The rate of gratuity is calculated as per the following formula:

Gratuity = Last Drawn Pensionable Pay x Pensionable Service

If service is greater than 10 years:

$$\text{Monthly Gross Pension Amount} = \frac{7}{300} \times [\text{Completed Years of Qualifying Service}] \times [\text{Last Monthly Pay}]$$

Completed Years of Qualifying Service is subject to a maximum service period of 30 years. The maximum pension amount is thus limited to 70% of the last drawn pensionable Pay

The employees can surrender up to a maximum of 35% of the gross pension in lieu of a lumpsum-commuted value. The commuted value at age 60 shall be calculated as per the following formula:

Commuted Value = 12.37 x amount of pension surrendered x 12

ii. Early Retirement Pension

Early retirement is applicable on the completion of 25 years of continuous service.

$$\text{Monthly Gross Pension Amount} = \frac{7}{300} \times [\text{Completed Years of Qualifying Service}] \times [\text{Last Monthly Pay}]$$

Completed Years of Qualifying Service is subject to a maximum service period of 30 years. The maximum pension amount is thus limited to 70% of the last drawn pensionable Pay

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The employees can surrender up to a maximum of 35% of the gross pension in lieu of a lumpsum-commuted value. The age-based commutation factors are set out in the table (later in the section)

iii. Death in Service

If service is greater than 5 and less than 10 years:
A lump sum gratuity is payable. The rate of gratuity is calculated as per the following formula:

Gratuity = 1.5 x Last Drawn Pensionable Pay x Service

If service is greater than 10 years:

$$\text{Monthly Gross Pension Amount} = \frac{7}{300} \times [\text{Completed Years of Qualifying Service}] \times [\text{Last Monthly Pay}]$$

Completed Years of Qualifying Service is subject to a maximum service period of 30 years. The maximum pension amount is thus limited to 70% of the last drawn pensionable Pay

$$\text{Widow's Pension} = 75\% \times \text{Gross Pension}$$

Widow's pension is paid to eligible children in case of death of the widow. Eligible children are defined as legal male child under the age of 21 years and legal unmarried daughter

In addition to the above, the widow is entitled to Family Gratuity.

Family Gratuity Formula

$$\text{Gratuity Amount} = 25\% \times [\text{Gross Pension}] \times 12 \times [\text{Commutation Factor based on age next birthday of deceased}]$$

iv. Death after Retirement

In case of death after retirement, the widow is entitled to receive 75% of the pension being received by the retiree.

Widow's pension is paid to eligible children in case of death of the widow. Eligible children are defined as legal male children under the age of 21 years and legal unmarried daughters.

v. Ill-health Retirement Pension

If service is greater than 5 and less than 10 years:

A lump sum gratuity is payable. The rate of gratuity is calculated as per the following formula:

Gratuity = 1.5 x Last Drawn Pensionable Pay x Service

If service is greater than 10 years:

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$$\text{Monthly Gross Pension Amount} = \frac{7}{300} \times [\text{Completed Years of Qualifying Service}] \times [\text{Last Monthly Pay}]$$

Completed Years of Qualifying Service is subject to a maximum service period of 30 years. The maximum pension amount is thus limited to 70% of the last drawn pensionable Pay

The employees can surrender up to a maximum of 35% of the gross pension in lieu of a lump sum-commuted value.

Table 12: Eligibility requirements and benefits summary:

Type of Pension	Service Requirements	Benefit Type and Amount
Superannuation	Service Years < 5	Nil
	5≤ Service Years <10	Gratuity at 1 Month's Pay
	10 ≤ Service Years	Full Pension Formula
Invalid	Service Years < 5	Nil
	5≤ Service Years <10	Gratuity at 1.5 Month's Pay
	10 ≤ Service Years	Full Pension Formula
Compensatory	Service Years < 5	Nil
	5≤ Service Years <10	Gratuity at 1 Month's Pay
	10 ≤ Service Years	Full Pension Formula
Retiring	Service Years < 25	Nil
	25 ≤ Service Years	Full Pension Formula
Family - *death in service*	Service Years < 5	NIL
	5≤ Service Years <10	Gratuity at 1.5 Month's Pay
	10 ≤ Service Years	Family Gratuity Plus 75% of Pension Formula
Family - *death after retirement*		75% of pension being received by the deceased

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vi. Immediate (Ad hoc) Pension Increase

According to the notifications issued by the Federal Government, with effect from 1st July 2021, the Net Pension amount payable for new retirees will increase by 99% after allowing for the previous increases as follows:

Table 13: Immediate (Ad hoc) Pension Increase

Year	Effective Date	Rate of Increase
2011	01.07.2011	15.00%
2015	01.07.2015	7.50%
2016	01.07.2016	10.00%
2017	01.07.2017	10.00%
2018	01.07.2018	10.00%
2019	01.07.2019	10.00%
2021	01.07.2021	10.00%

vii. Minimum Pension

The minimum pension payable to a retired employee is Rs.10,000/- per month. Minimum pension payable to a Family pensioner is Rs. 7,500/- per month (i.e. 75% of Rs.10,000/-) as per notification No.F. 15(1)-Reg.6/2018-644 dated 3rd July 2018.

iii. Commutation Factors

Following is the age-based commutation table showing commutation factors at ages 20 – 60.

Table 14: Age-Based Commutation Factors

Age	Commutation Factors	Age	Commutation Factors	Age	Commutation Factors
20	40.5043	36	28.3362	52	17.0050
21	39.7341	37	27.5908	53	16.3710
22	38.9653	38	26.8482	54	15.7517
23	38.1974	39	26.1009	55	15.1478
24	37.4307	40	25.3728	56	14.5602
25	36.6651	41	24.6406	57	13.9888
26	35.9006	42	23.9126	58	13.4340
27	35.1372	43	23.1840	59	12.8953
28	34.3750	44	22.4713	60	12.3719
29	33.6143	45	21.7592		
30	32.8071	46	21.0538		
31	32.0974	47	20.3555		
32	31.3412	48	19.6653		
33	30.5869	49	18.9841		
34	29.8343	50	18.3129		
35	29.0841	51	17.6526		

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ix. Restoration

The retiree shall be entitled to pension restoration of their commuted part with indexation after the lapse of several years of commutation factor.

x. Medical Allowance

All the retirees retiring in Basic Pay Scales (BPS) 16 to BPS-22 are entitled to Medical Allowance at the rate of 20% as per notification No.FD(R-I)II-29/2010/1150-1270 dated 19th July 2010.

All the retirees retiring in Basic Pay Scales 1 to BPS 15 are entitled to Medical Allowance at the rate of 25% as per notification No.FD(R-I)II-29/2010/1150-1270 dated 19th July 2010.

Medical Allowance amount is increased by 25% immediately for new pensioner as per notification No.FD(R-I)II-29/2015/1814-1934 dated 13th July 2015.

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Annexure B – Mortality & Withdrawal Rates

Table 15: Mortality & Withdrawal Rates

Attained Age	Mortality	Withdrawal	Attained Age	Mortality
20	0.96	100	61	17.50
21	0.97	86	62	18.88
22	0.99	97	63	20.28
23	1.01	65	64	21.68
24	1.03	44	65	23.05
25	1.06	30	66	24.39
26	1.08	48	67	25.69
27	1.12	31	68	27.51
28	1.15	20	69	29.46
29	1.19	14	70	32.25
30	1.24	10	71	35.33
31	1.29	7	72	38.76
32	1.35	16	73	42.42
33	1.41	10	74	46.38
34	1.49	7	75	50.70
35	1.58	5	76	55.44
36	1.68	3	77	60.65
37	1.79	3	78	66.23
38	1.92	8	79	72.23
39	2.08	5	80	78.71
40	2.25	4	81	85.71
41	2.45	3	82	93.28
42	2.67	2	83	101.39
43	2.93	2	84	110.05
44	3.22	2	85	119.26
45	3.55	14	86	129.04
46	3.93	16	87	139.42
47	4.36	18	88	150.66
48	4.84	21	89	162.61
49	5.38	23	90	175.32
50	5.99	25	91	188.99
51	6.67	23	92	203.97
52	7.42	21	93	220.61
53	8.24	19	94	239.47
54	9.15	17	95	260.84
55	9.40	15	96	284.96
56	10.13	13	97	312.35
57	11.20	11	98	343.66
58	12.34	9	99	379.21
59	13.54	8	100	419.67
60	14.81	1000		

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Annexure C - Risks associated with Defined Benefit Plans

IAS 19: Para 135(a) Characteristics of Defined Benefit Plan and Risks Associated with It
IAS 19: Para 139(b) Description of Risk exposures

USTB through its Defined Benefit Pension Plan will be exposed to several risks, the most significant of which are detailed below:

- **Investment Risk:**

The risk arises when the Scheme's assets are lower than the assumed discount rate. As per IAS 19 (Revised 2011), any shortfall in the attained investment return on the assets vis-à-vis the assumed discount rate would be recognized through Other Comprehensive Income.

As the Company does not have any Scheme assets, at the end of each year the interest cost is accrued to the Company's Profit & Loss account as a proportion of the Scheme's liability.

- **Salary Increase Risk:**

As per the Scheme Rules, the benefit is linked to the final salary at the time of retirement/termination. The risk arises when the actual rate of salary increase over the lifetime of the employees is higher than the rate assumed in the valuation calculation.

- **Longevity Risk:**

The risk arises when the actual mortality rate of the Scheme members is lower than expected. In the case of Pension Schemes, where the benefit paid is an annuity after the age of retirement, rather than lumpsum payments made at the remaining this risk is expected to be material.

- **Withdrawal Risk:**

The risk of actual withdrawals/attrition varying from the actuarial assumption can impose a risk to the Benefit Obligation. The movement in the liability can go up or down.

Further, the relationship between the Scheme liability and the withdrawal rate is not direct and is influenced by the composition of the members' age and their total period of service on the Valuation Date.

- **Pension increase risk**

The risk that the actual pension increase is higher than expected, where benefits are being paid in form of monthly pension, is likely to have an impact on the Plan Liability.

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Annexure D - Glossary, Terms, Definitions

Current service cost
This is the discounted present value of benefits attributed by the Plan's benefit formula to services rendered by employees during the accounting period. It is measured using an assumption as to future pay levels.

Defined Benefit Obligation
This quantity is the discounted present value of all benefits attributed by the Plan's benefit formula to services rendered up to the measurement date by the employees as on the valuation date. It is measured using an assumption as to future pay levels.

Net defined benefit liability (asset)
Deficit or surplus, adjusted for the effect of the asset ceiling

Net interest on the net defined benefit liability (asset)
The change in the net defined benefit liability (asset) during the period is due to the interest (time value of money).

Net Periodic Pension Cost
This is the profit and loss charge for the accounting period and comprises the sum of the service and interest costs less the expected return on assets, plus an allowance for amortization of any net liabilities not recognized in the balance sheet.

Past service cost
The change in the present value of the defined benefit obligation for employee service about periods before the current accounting period, resulting from a Plan amendment or curtailment or the first-time valuation of the Plan.

Projected Unit Credit method
Under the PUC method, a "projected accrued benefit" is calculated at the beginning of the period and again at the end of the period for each benefit that will accrue for all active members of the Plan. The "projected accrued benefit" is based on the Plan's accrual formula and upon service as of the beginning or end of the period, but using a member's final compensation, projected to the age at which the employee is assumed to leave active service. The Plan liability is the actuarial present value of the "projected accrued benefit" as of the date of valuation.

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